(12) **United States Patent**   (10) **Patent No.:**   **US 7,457,706 B2**

Melero et al.   (45) **Date of Patent:**   **Nov. 25, 2008**

(54) **3-DIMENSIONAL INTERACTIVE IMAGE MODELING SYSTEM**

(75) Inventors: **Kenneth Melero**, Centreville, VA (US); **Douglas W. Shibla**, Ashburn, VA (US); **Mark R. Lucas**, Melbourne Beach, FL (US)

(73) Assignee: **Harris Corporation**, Melbourne, FL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 574 days.

(21) Appl. No.: **10/281,898**

(22) Filed: **Oct. 25, 2002**

(65) **Prior Publication Data**

US 2003/0088362 A1   May 8, 2003

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/640,135, filed on Aug. 16, 2000, now Pat. No. 6,484,101.

(51) **Int. Cl.**
G01V 3/38 (2006.01)
G06K 9/03 (2006.01)

(52) **U.S. Cl.** **702/5**; 382/311

(58) **Field of Classification Search** 702/5, 702/2, 16, 1; 382/311, 278, 305
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,181,836 B1 *	1/2001	Delean	....	382/302
6,421,610 B1 *	7/2002	Carroll et al.	....	702/5
6,604,046 B1 *	8/2003	Van Watermulen et al.	.	701/208
6,687,416 B2 *	2/2004	Wang	....	382/278
6,704,654 B2 *	3/2004	Carroll et al.	....	702/5
6,708,117 B2 *	3/2004	Carroll et al.	....	702/5

OTHER PUBLICATIONS

McCurley, Geospatial Mapping and Navigation of the Web, May 1-5, 2001, WWW 10.*
Jung, MetaViz: Visual Interaction with Geospatial Digital Libraries, Oct. 1999, International Computer Science Institute, Technical Report TR-99-017.*
Faust et al., Real-Time Global Data Model for the Digital Earth, 2000, Proceedings of the International Conference on Discrete Global Grids.*
Potmesil, Maps Alive: Viewing Geospatial Information on the WWW, 1997, Computer Networks and ISDN Systems 29, pp. 1327-1342.*

* cited by examiner

Primary Examiner—Michael P. Nghiem
Assistant Examiner—Toan M Le
(74) *Attorney, Agent, or Firm*—Hamilton Brook Smith Reynolds, P.C.

(57)   **ABSTRACT**

A system and method for generating custom geospatial information maps and precision corrected images allows real-time interactive production of a desired output image by incorporating user selectable parameters that define various image synthesizing operations. A graphical user interface allows a user to specify parameters that define the desired output image via a remote computing device over a public access network such as the Internet. The parameters define image synthesizing operations such as area, projection, datum, fusion, masking, blending, mosaiking, resampling, and others. The desired output image is processed by an image assembly server according to the parameters and a variety of geospatial image data sources, and electronically delivered to a user via a public access network. The geospatial information may also be correlated with non-georeferenced data such that relevant associations between non-georeferenced data and the geospatial data are integrated in the output information product.

24 Claims, 6 Drawing Sheets